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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/727,714

12/05/2003

Ju-hyung Kim

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EXAMINER

WALKER, KEITH D

ART UNIT

PAPER NUMBER

1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/15/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/727,714	<b>Applicant(s)</b> KIM ET AL.	
	<b>Examiner</b> Keith Walker	<b>Art Unit</b> 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 12, 15-17, 20, 27, 28 and 35-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12, 15-17, 20, 27, 28 and 35-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/3/06</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/15/06 has been entered.

Claims 12, 15-17, 20, 27, 28 & 35-38 are pending and have been examined as indicated below.

### ***Information Disclosure Statement***

The information disclosure statement filed on 11/3/06 has been placed in the application file and the information referred to therein has been considered as to the merits.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 12 & 38 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 18 & 28 of copending Application No. 10/737,837. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim a can housing an electric generation element with a safety device, a plate attached to a first surface of the can, and a lead unit electrically connecting the first terminal and the second terminal through the safety device. The lead comprises a first material with a cladding of a second material. The only difference between the two pending applications is the instant application's safety device is a PTC device. This species of safety devices renders obvious the genus class of safety devices.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Claim Objections***

2. Claim 20 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 20 is dependent on cancelled claim 19. It is unclear which claim is suppose to be the parent claim for claim 20. The claim is being examined as though it depends from the independent claim 12.

3. Applicant is advised that should claim 20 be found allowable, claim 36 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 20 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The protection circuit limitation adds a third protective circuit to the lithium battery, the other two being "a safety device" and "a positive temperature coefficient (PTC) element" recited in claim 12. The original specification only supports two safety devices, a PTC element and a protective circuit.

5. Claims 12, 15-17, 20, 27, 28 & 35-38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claims 12 & 38 and as discussed below in the Claims Interpretation section, if the limitation “including a portion of the first lead, the cladding layer of which being connected to the can” is interpreted to mean a part of the first lead is attached to the PTC element and the cladding layer of this part of the first lead attached to the PTC element is connected to the can, then the claim is rejected as new matter. It appears Applicant is describing figure 6B of the instant application. This figure clearly shows one type of metal attached to the PTC but no cladding material attached to the can on that metal piece. The metal attached to the PTC element is attached to another metal having a cladded material, which is attached to the can.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

6. Claims 12, 15-17, 20, 27, 28 & 35-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claims 12 & 38, the limitations following “a safety device, electrically...” are grammatically awkward and difficult to understand. For instance, it is unclear what is meant by or what the

statement "...including a portion of the first lead..." adds to the limitation. The limitations list a 'safety device' and a 'PTC element' are these two devices the same element are two separate elements?

Claims depending from claims rejected under 35 USC 112 are also rejected for the same.

7. Claim 20 recites the limitation "the protecting circuit" in line 2. There is insufficient antecedent basis for this limitation in the claim.

### ***Claims Interpretation***

In light of the 112 rejections and Claim Objections listed above, the Claims are being given their best interpretation. Regarding claims 12 & 38, the 'safety device' and 'positive temperature coefficient (PTC) element' are being interpreted as being the same device. Therefore the 'protecting circuit' of claim 20, which is being interpreted as dependent on claim 12, is the second safety device disclosed in the instant application.

Regarding the statement 'including a portion of the first lead' cited above in the 112 rejection, if the statement is interpreted to mean the PTC element has a portion of the first lead attached to it before the whole battery is assembled then the claim limitation is seen as product-by-process and as such even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product

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was made by a different process (MPEP 2113). The final product being a PTC element connected by a first lead made of one material and a second lead made with two materials between two terminals of a battery. If this interpretation is applied, see the rejection discussed above under 112 first paragraph.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 12, 17, 20, 27, 28 & 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,492,058 (Watanabe) in view of US Patent 5,976,729 (Morishita) and US Patent 5,188,909 (Pedicini).

As best interpreted in light of the rejections and discussions listed above, the following rejection applies.

Watanabe teaches using a positive temperature coefficient (PTC) safety device between the terminals (Figs. 10, 15; 8:43-49). The PTC protects the battery by restricting the flow of current when the temperature increases and a rapid increase in the voltage will cause the battery to heat up. A protection circuit is used in conjunction with the PTC to aid in preventing the over-charging and over-discharging (Fig. 1 & 2; 1:13-20). The protection circuit is connected to the safety device and the second terminal (8:65 – 9:5). The intermediate product, as taught by Watanabe is a lithium



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battery with a safety device located on the exterior of the battery with one end of the lead disposed at a terminal and the other end connected to the safety device (Figs. 1, 2, 10). The PTC element has separate leads coming from the element before assembly with the two leads attached to their respective terminals (Figs. 1 & 10 and relevant passages).

Regarding claims 12 & 38, the claims are seen as product-by-process and even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process (MPEP 2113). The final product described is a battery with two terminals having two leads and a PTC element located between the leads. One lead is an output lead made of a first material and the second lead is the first lead made of a first material and a cladding material. The number of sub-leads on the different parts used to assembly the battery is a process of making the battery and does not patentably distinguish the instant claims over the prior art.

Regarding claims 27 & 28, the claims are seen as product-by-process and even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is

unpatentable even though the prior product was made by a different process (MPEP 2113). The method of forming the weld is not germane to the issue of patentability of the device itself and therefore this limitation has not been given patentable weight.

Watanabe teaches spot-welding the materials together, producing an end product that has been welded and is not patentably distinct from the instant claims.

Watanabe is silent to the materials used for the leads and the housing.

Like Watanabe, Morishita teaches a lithium ion cell with an external protective circuit for controlling the cell voltage to prevent overcharge and over-discharge (1:10-15). The lithium cell has a first surface of the outer can and a second surface being the lid (4:1-16). It is obvious to one skilled in the art to attach one electrode to a first surface of the case and the opposite electrode to a second surface to make a battery with external contacts, as shown by Pedicini (5:52-66). The outer can be made from aluminum alloy and the lead is made from a first material nickel and a second material of aluminum (5:30-38). The components are welded together using ultrasonic welding (2:37-40). Further, Morishita teaches the use of different materials in the making of the leads with alternate welding techniques. As stated above, the outer can and lead are made of the same material and attached using ultrasonic welding so a smaller heat value is required, thereby preventing the occurrence of pinholes and cracks (2:37-53). Two-layer cladding for the lead plate is also used for current utilization (5:22-27). So regarding the different first and second materials used as leads, the use of multiple materials is taught and it would have been obvious to one having ordinary skill in the art at the time the invention was made to pick lead materials based on the use in the

battery and the style of welding needed. It is held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice (*In re Leshin*, 125 USPQ 416).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the lithium cell of Watanabe with the battery casing and lead material of Morishita to understand what materials should be used for the leads in the production of the lithium battery with a protective device.

Watanabe is silent to the use of a safety vent.

Pedicini teaches sealing the opening of the battery with a cap assembly that has a vent for the cell (5:52-66).

The motivation to use a cap with a vent is to provide a means for the expulsion of any internal gas pressure created by the battery. The pressure will not only cause a decline in the effectiveness of the battery but can cause the battery to rupture.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the battery of Watanabe with the cap vent to promote a safer and more efficient battery.

### ***Response to Arguments***

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Regarding the indication of allowability, Examiner did not indicate the allowability of the claims during the interview. The only indication given would be that dependent

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on the claim amendments, the new claims might overcome the art of record and a new search might have to be done. Applicant's impression of allowability was misinterpreted.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Walker whose telephone number is 571-272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker

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